Melanoma of the Head and Neck

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Melanoma of the Head and Neck Overview

- Epidemiology
- Clinical Presentation
- Staging
- Surgical Therapy
- Radiation Therapy
- Chemotherapy
- Immunotherapy

Epidemiology

- Incidence of cutaneous malignant melanoma increasing worldwide.
  - 8th most prevalent CA in US.
  - Risk=1:90 lifetime
- Fair complexion, blue eyes, blonde hair, sunburn easily.
- Sun exposure and melanoma.

Epidemiology (cont…)

- H&N 15% to 30% of al melanomas- 2nd in incidence to extremities.
  - # of melanocytes in cheek and forehead 2-3X.
- Overall 5 yr survival increased from 6% to 79%- education and early detection.

Clinical Presentation

- Four major criteria- changes over wks increase suspicion
  - Color
  - Border
  - Topography
  - Surrounding Tissue

Color

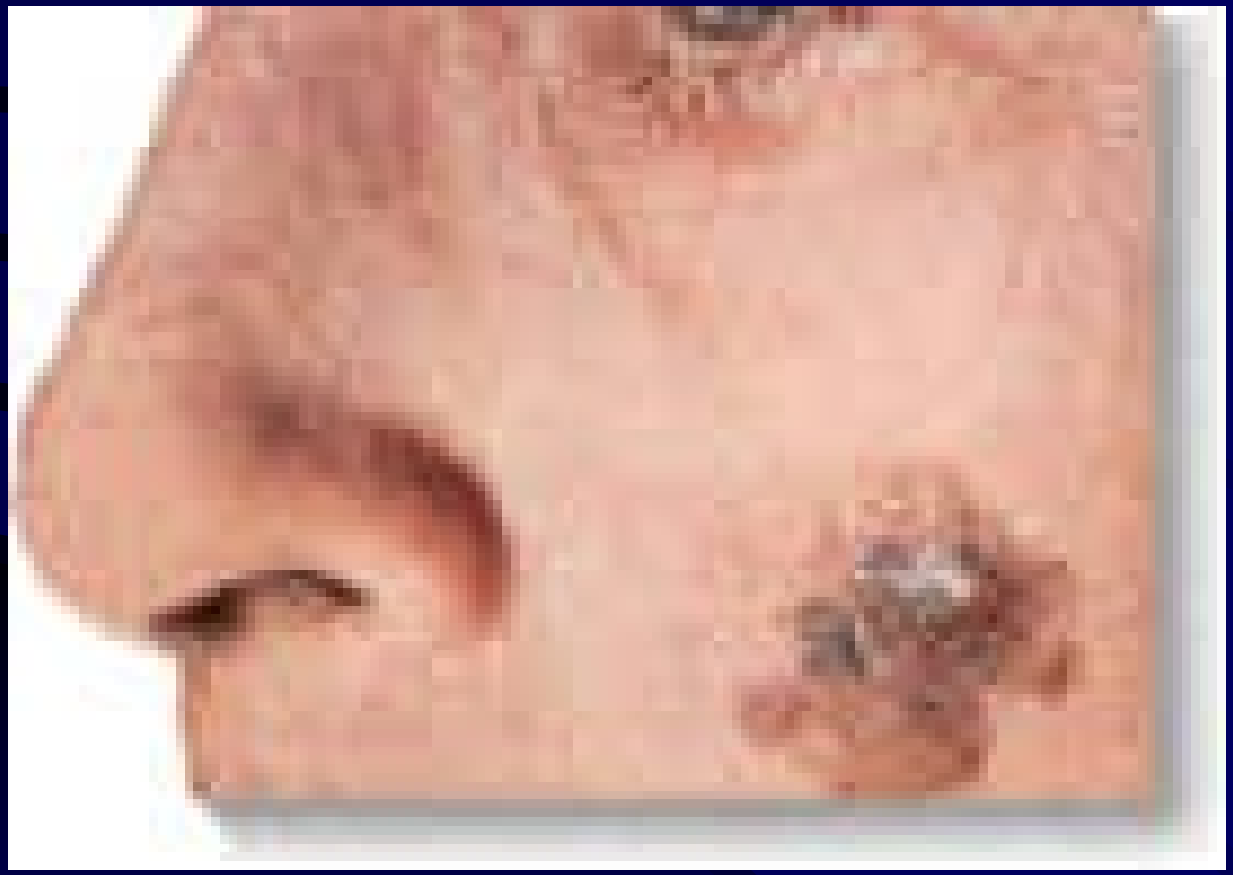
- Lack of uniformity critical
  - “patriotic tumor”
    - blue- dermal melanin
    - red- inflammation
    - white- regression

Color

Border

- Changes in the border- early sign tumor is entering radial growth phase.
  - Two distinct growth phases:
    - radial (intraepithelial)- circumferential confined by dermoepidermal junction w/out invasion.
    - vertical (intradermal)- invasion through the dermoepidermal junction.

Border



Topography

- Lesions display nodularity, undulations, verrucous quality, ulceration (poor prognostic sign).

Topography

Surrounding Tissue

- Changes in the surrounding tissue may signify development of satellite lesions.

Surrounding Tissue

Types of Melanoma

- Superficial spreading
- Lentigo maligna
- Acral lentiginous
- Nodular

Superficial spreading

- 65% to 76%
- 4th and 5th decades
- “kaleidoscopic” in colors
- radial and vertical growth phases variable
- ulceration and bleeding= vertical growth
- high cure rate if detected in radial phase

Lentigo maligna

- 6% to 10 %
- in H&N of elderly
- best prognosis
- has the longest radial growth phase
- grows slowly- over 10 yrs
- before invasion- lentigo maligna (Hutchinson’s freckle)
- vertical phase= melanoma

Acral lentiginous

- 5% to 7%
- most common kind seen in blacks
- hands, feet, oral and anogenital mucosa
- radial and vertical phases variable
- poor prognosis due to rich vascular supply, early angiolymphatic spread, delay in dx.

Nodular

- 10%
- shade of blue, in unexposed skin
- vertical growth
- most invasive
- poor prognosis

Staging

- Clark
- Breslow
- American Joint Committee on Cancer TNM

Clark’s classification

- **Clark Level of Invasion** – The method described by Dr. Wallace Clark for measuring the penetration of a primary melanoma into the skin by anatomic layer.
  - Level I- intraepidermal ("melanoma in-situ”)
  - Level II- invasion of papillary dermis
  - Level III- invasion of papillary dermis to reticular dermis

Clark's classification (cont...)

- Level IV- invasion of reticular dermis
- Level V- invasion of fat

Breslow’s classification

- **Alexander Breslow** (1975) noted that the thickness of a melanoma was related to 5-year survival after surgical removal of the tumor.

Breslow's classification (cont...)

Breslow thickness	5-Year Survival
less than 0.76 mm	97 %
0.76-1.50 mm	92 %
1.51-2.50 mm	76 %
2.51-4.0 mm	62 %
4.1-8.0 mm	52 %
more than 8.0 mm	32 %

Staging for melanoma AJCC

- Primary tumor (T)
- Tx No evidence of primary tumor
- T0 Atypical melanocytic hyperplasia (Clark level I)
- T1 Invasion of papillary dermis (level III), or <0.75 mm thick
- T2 Invasion of papillary-reticular-dermis (level III), or 0.76–1.5 mm thick
- T3 Invasion of reticular dermis (level IV), or 1.51–4.00 mm thick
- T4 Invasion of subcutaneous tissue (level V), or >4.0 mm thick or satellites within 2 cm of the primary

Staging for melanoma AJCC (cont…)

- Nodal involvement (N)
- N0 No regional node involvement
- N1 Involvement of only 1 node station, movable and <5 cm, or negative nodes but <5 in-transit metastases >2 cm from primary
- N2 Any of the following: involvement of >1 nodal station, regional node >5 cm or fixed, 5 or more in-transit metastases or any in-transit metastases >2 cm from primary with regional node involvement.

Staging for melanoma AJCC (cont…)

- Distant metastasis (M)
- M0 No distant metastasis
- M1 Distant metastasis

- When thickness and level-of-invasion criteria do not coincide within a T classification, thickness should take precedence.

Staging for melanoma AJCC (cont…)

Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N0	M0
	T3	N0	M0
Stage III	T4	N0	M0
	Any T	N1	M0
Stage IV	Any T	Any N	M1

Surgical therapy

- Shave excision or curettage contraindicated- incompatible with accurate microstaging.

- Dermal punch biopsy, into the subcutaneous fat, from the area of deepest invasion:
  - accurate staging information.
  - not been shown to increase local recurrence or distant metastasis.

Surgical therapy

- Frozen section biopsies
  - evaluated as to Breslow's thickness, and then proceed immediately to excision.
- Variability of measurement
  - wait for permanent sections based on serial evaluation to determine stage.
- 5 cm margins for all melanomas is no longer the norm particularly in H&N.

Surgical therapy

- Current general recommendations support resection margins based on tumor thickness:
  - Less than 0.5 mm—upper limit is 1 cm; less may be required.
  - 0.5 to 1.0 mm—margin of 1 to 2 cm is adequate.
  - Greater than 1.0 mm—no less than 3 cm, with depth to include underlying fascia.

Surgical therapy

- Lentigo maligna melanomas can be treated as “thin” melanomas.
  - Mohs surgery for stage I lesions .

Surgical therapy

- The risk of local nodal metastasis varies directly with tumor thickness.
  - Lesions less than 0.75 mm—virtually no risk
  - Lesions measuring 0.76 to 1.49 mm—25% incidence.
  - Lesions measuring 1.5 to 3.99 mm—57% incidence.
  - Lesions measuring greater than 4.0 mm—62% incidence.

Indications for elective neck dissection in patients with head and neck melanoma

- Melanomas 0.75–1.5 mm thick in high-risk sites, ulcerated, or nodular melanomas.
- Melanomas 1.5–4.0 mm thick, in any site with predictable lymphatic drainage.
- Melanomas >4.0 mm for local and regional tumor control.
- Any melanoma >0.75 mm thick when inadequate patient follow-up is expected.

Surgical therapy

- Radical neck dissection does not address the suboccipital and postauricular lymph node groups.
  - especially important in melanomas of the scalp, neck, postauricular, and suboccipital areas.
  - posterolateral neck dissection effective in controlling regional metastases to these nodal groups.

Surgical therapy

- Auricular lesions
  - drain anteriorly to the preauricular and periparotid nodes, posteriorly to the postauricular nodes, and inferiorly to the subdigastric nodes.
  - palpable parotid nodes- neck dissection should include a total parotidectomy with preservation of the facial nerve, while END should include a superficial parotidectomy.

Surgical therapy

- Scalp lesions anterior to the pinna
  - drain to parotid, submandibular, submental, and upper jugular nodes.
- Scalp lesions posterior to the pinna
  - drain to the occipital, postauricular, and posterior cervical nodes.
- Temporal lesions
  - if requiring END, should also undergo a superficial parotidectomy.

Surgical therapy

- Lesions on the nose
  - rare.
  - better treated with delayed dissection because of unpredictable metastatic patterns.
- Lesions on the eyelid
  - < 1.5 mm- excision to the tarsal plate.
  - > 1.5 mm- excision to the orbital rim.

Radiation therapy

- Role in the local-regional treatment of head and neck cutaneous melanoma not yet well defined.
- Surgery remains the primary treatment modality.
- Primary radiotherapy is not indicated.

Radiation therapy

- Some local palliative effect in metastatic melanoma.
- Melanomas have been considered radioresistant.
    - Melanoma cells appear to have a large capacity for repair of sublethal radiation damage, which may partially explain earlier reports of radioresistance.

Radiation therapy

- Some malignant melanomas are radiosensitive.
  - Large dose-per-fraction regimens (400 to 800 cGy daily) could produce higher response rates when compared to conventional 200 cGy daily fractions for most cutaneous and distant melanomas
  - Cerebral and bone metastases respond to conventional radiotherapy with no evidence of improved response by high dose-per-fraction techniques.

Chemotherapy

- Development of practical adjuvant chemotherapy restricted by the lack of effective drugs.
  - Dacarbazine- most effective; overall response rate of 20%.
- Routine use in patients with limited resectable disease not indicated
    - most resectable disease is associated with long disease-free intervals.

Chemotherapy

- Significant toxicity and morbidity of prolonged chemotherapy with, at present, questionable benefit.
- Benefit versus drug toxicity issues.

Immunotherapy

- Strong evidence that immune factors are important in controlling tumor growth in malignant melanomas.
- Immunotherapeutic approaches are still experimental.
  - may be specific (tumor selectively targeted) or nonspecific (broad immune augmentation), and active (host stimulated to generate response) or passive (host given desired effector agent).

Immunotherapy

- Patients with the least tumor load, either high-risk primary melanoma (stage I) or localized metastatic disease (stage II) that has been removed, appear to be the best candidates for immunotherapy.
- At present, the most promising immunotherapy for such patients is active immunization with specific melanoma vaccines.

Immunotherapy

- Cutaneous metastases of melanoma have been treated by injection or topical application of nonspecific agents, such as BCG and dinitrochlorobenzene, and recently more specific autologous lymphokine preparations.
- Immunotherapy of disseminated disease involves the administration of effector cells [LAK or tumor-infiltrating lymphocyte cells], antibodies with antitumor activity, or pure immunologically active mediators (such as interleukin-2, interferon, and tumor necrotic factor).

Immunotherapy

- This represents passive, nonspecific immunotherapy for these patients. This therapy can be quite toxic and its effectiveness is still uncertain.
- Another potential extension of immunotherapy is into the prevention of melanoma with vaccines.

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